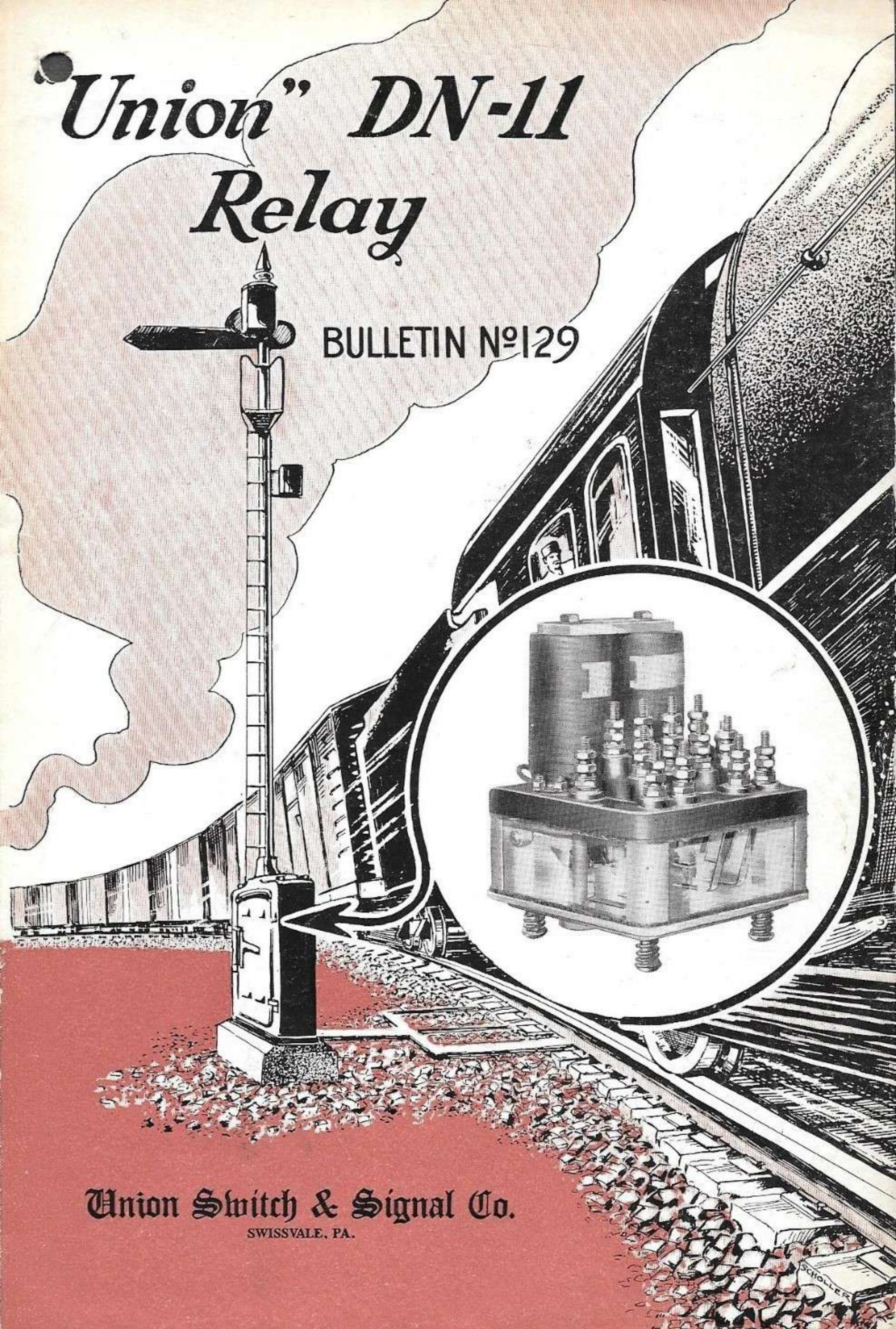
"Union" DN-11 Relay

BULLETIN №129



Union Switch & Signal Co.
SWISSVALE, PA.

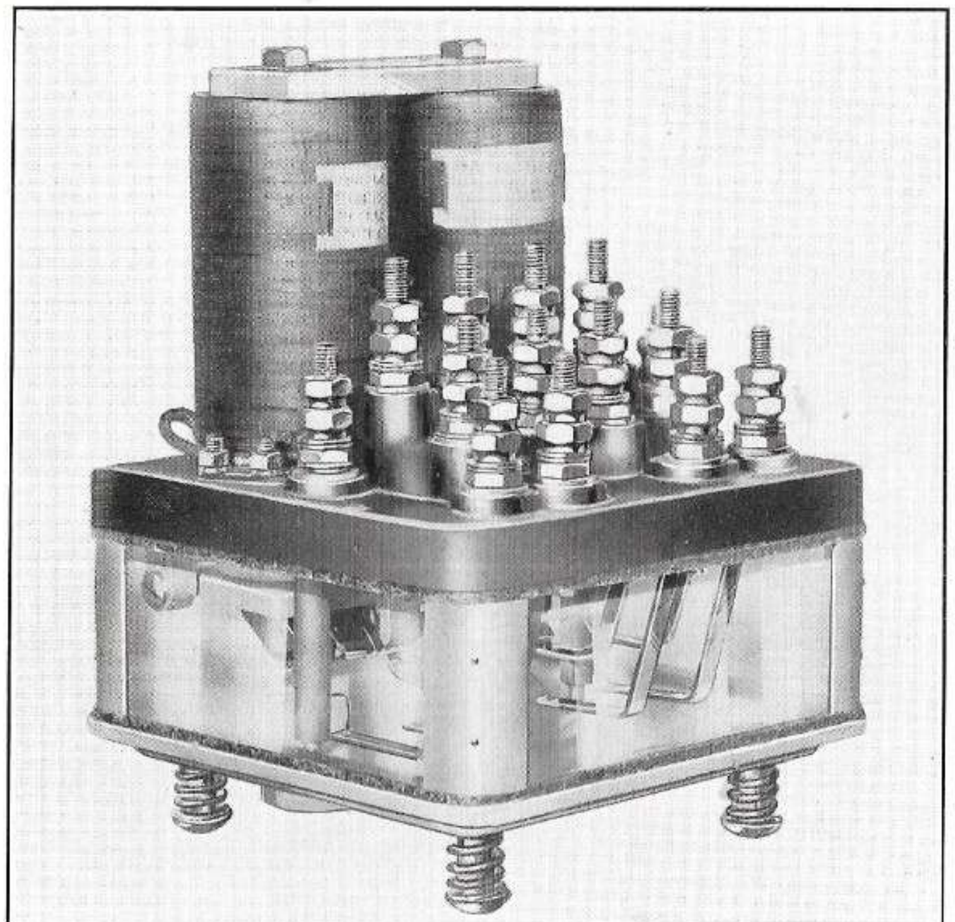


FIG. No. 1—*The DN-11 Relay is shown mounted on shock absorbing springs which should be ordered separately*

"Union" DN-11 Relay

IN offering to the field the "Union" DN-11 relay for track and line use, attention is called to three outstanding features of merit—size, simplicity and calibration—making a direct appeal to those now using the relay as well as those wanting a relay having these characteristics.

The relay, because of its small size and compactness, makes possible the utilization of the additional space in the relay shelter for other equipment. The relay is 6¼ in. square by 8 1/16 in. in height. It is designed for either wall or shelf mounting. The top plate is of moulded bakelite, and the base structure has a metal bottom and plate glass sides. However, at the option of the customer, a base made entirely of moulded glass can be furnished. The base structure on all models is equipped with lugs which support the relay and also provide a means of attaching shock absorbing springs when desired. The standard mounting for this relay is the shelf type; but for wall mounting, a bracket may be attached to the top plate.

Another feature of merit is the improved terminal post arrangement which permits the maintainer to follow the circuits more easily through the relay. It will be noted that these terminal posts are designed so that the various rows are at different levels to facilitate the making of wire connections to the relays. All openings in the top plate are permanently sealed to prevent water entering the relay.

The terminal posts are arranged in three rows parallel to the front of the relay. The heels of the contact fingers terminate on the front row of the terminal posts. The middle row of terminal posts are for the back contacts and the third row, next to the coils, are for the front contacts. The first set of terminal posts on the left hand side represents the three connections to the contact finger on the left. The next set of terminal posts is for the next contact finger from the left and so on across the relay. The terminal posts for the coils are located on the left and right hand side respectively on the relay as shown in Fig. No. 1. These terminal posts are easily identified because the leads of the coils are connected directly to them.

The V type graphite and flat spring finger contacts, as shown in Fig. No. 2, are standard equipment for the "Union" DN-11 relays, thus a system of contacts is provided which wears uniformly without pitting and eliminates the possibility of distortion. The back contacts are designed so as to eliminate entirely the possibility of dirt collecting on the contact faces. Mounted on a bakelite support, the contact fingers are rigidly held and are well insulated. Articulated fingers with gauge contacts providing individual adjustment for each contact may be furnished when specified. The DN-11 relay is manufactured with 4, 6, 8 and 10 front and back contacts.

The calibration for the 4-ohm relay drop-away with and without spring pressure is maintained at 0.037 amp. and 0.015 amp. respectively, the same as provided for in A. R. A. specifications and practice for many years. The values for maximum pick-up and working current have been brought together and are lower than the direct pick-up on previous relays. This means a better relation between pick-up and release. The 4-ohm relay will give full contact pressure (armature against stop pin) at 0.070 amp., will pick up at 0.065 amp. and release at 0.037amp.

or higher. The following tabulation shows the operating characteristics of the 4-point, 4-ohm relay in condensed form:

Minimum drop-away without contact pressure	0.015 amp.
Minimum drop-away with contact pressure -	0.037 amp.
Direct pick-up - - - - - - - - - -	0.065 amp.
Maximum working current (armature to stop pin) - - - - - - - - - - -	0.070 amp.
Front contact opening - - - - - - -	0.050 in.
Back contact opening when front contact just makes - - - - - - - - - - -	0.050 in.

The low working current of the "Union" DN-11 relay accomplishes a fourfold purpose:

A longer battery life.
The operation of longer track circuits.
The possibility of eliminating cut sections.
Increased train shunting sensitivity when applied to existing track circuits.

The possibility of eliminating cut sections alone is a large factor in the reduction of maintenance and operating costs.

Specify "Union" DN-11 relays for maintenance renewals and new work

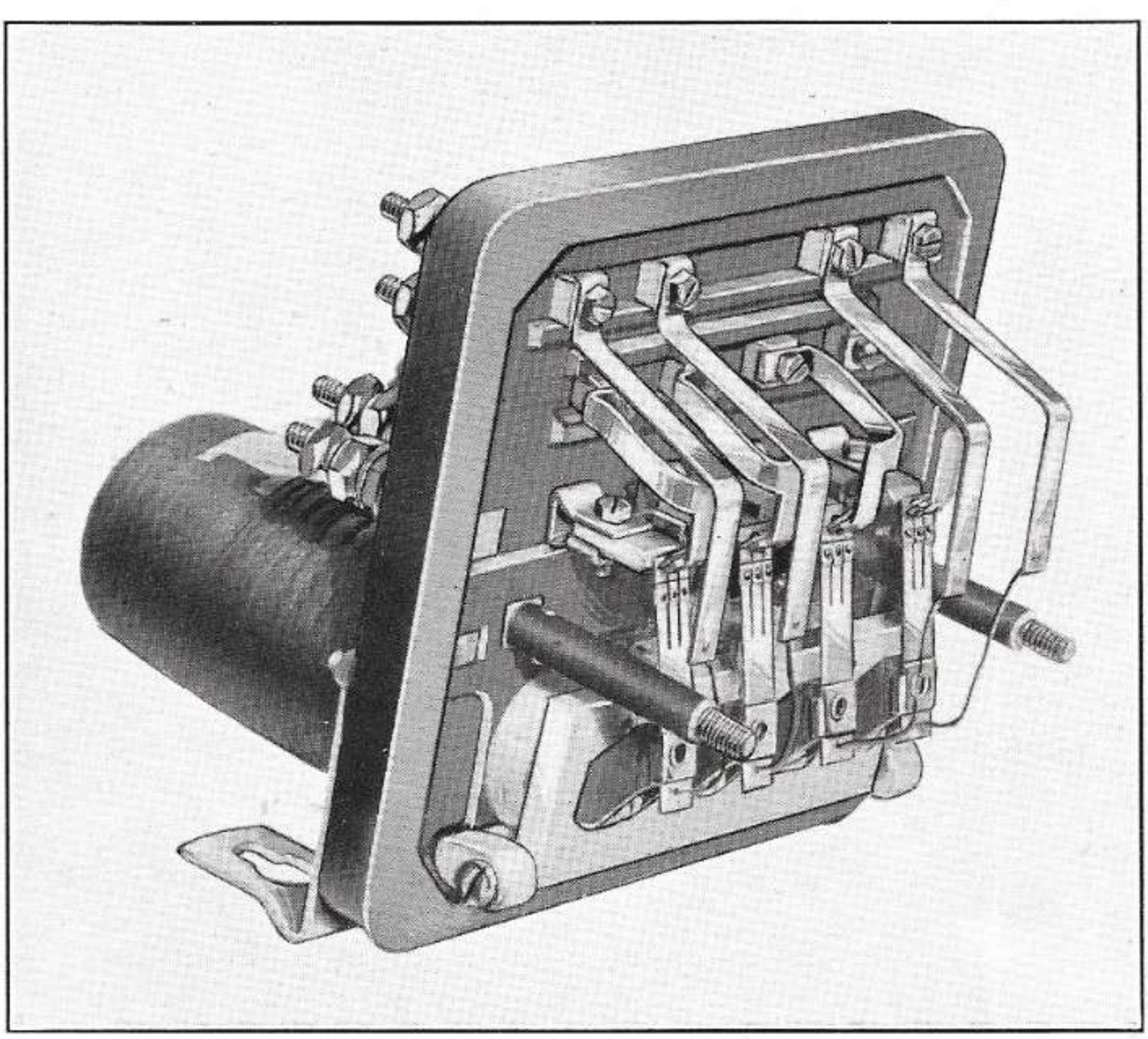


FIG. NO. 2—*Showing the V type graphite and flat spring finger contacts and bracket for wall mounting*

Ordering References For Style DN-11 D. C. Neutral Relays

UNLESS otherwise specified in the order, relays will be furnished with silver-to-graphite front contacts and silver-to-silver back contacts.

High voltage contacts, slow release or quick acting relays also can be supplied when required.

In ordering please specify:

Resistance per pair of magnets.
Shelf or wall type mounting.
Line or track relays.

DN-11 Relays can be furnished in the following contact combinations:

Relay	Front Contacts	Back Contacts
4 Point	4 4	2 4
6 Point	6 6 6	2 4 6
8 Point	8 8 8 8	2 4 6 8
10 Point	10 10 10 10 10	2 4 6 8 10

Detail Ordering References for Style DN-11 Relays can be found on Plates E-4900 to E-4903 inclusive, of the D. C. Section, E Catalog.

Union Switch & Signal Co.

SWISSVALE, PENNSYLVANIA

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